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(71) Applicant
JAB Products Limited
 (Incorporated in the United Kingdom)
 50 Lichfield Street, Wolverhampton, United Kingdom

(72) Inventor
John Bramhill

(74) Agent and/or Address for Service
Crooke & Co
 1 Southernhay West, Exeter, Devon EX1 1JG,
 United Kingdom

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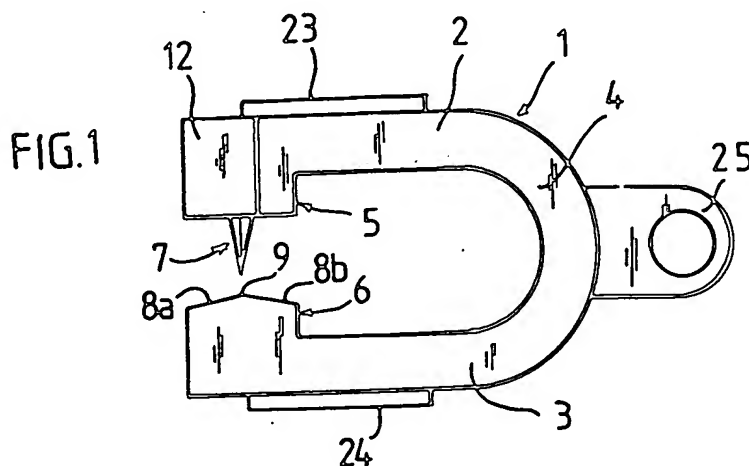
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US 4711031 A US 4581823 A

(58) Field of search
 UK CL (Edition K) **B4B**
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(54) Cutting device

(57) The device is intended to be used held in the hand, e.g. for opening sealed plastics bags, and includes a unitary moulded plastics body 1 which is in the shape of a flat strip formed into a U to provide a pair of arms 2, 3 with grip surfaces 23, 24, joined together at one end. The free end of the arm 2 carries a blade 7 having a crescent moon shaped cutting edge (10, Fig 2) which is directed towards a shallow peak 9 formed by abutment surfaces 8a, 8b on the other arm 3. The blade 7 is mounted on a pin (20, Fig 3) formed on a retaining member 12 which is secured to the free end of arm 2 by snap engagement and preferably also by bonding, e.g. by ultrasonic welding. There is normally a gap between the blade 7 and the peak 9, but the arms can be pinched together between thumb and forefinger against inherent resilience of the body 1 to urge the blade into cutting engagement with e.g. the edge region of plastics package supported on the abutment surfaces 8a, 8b.



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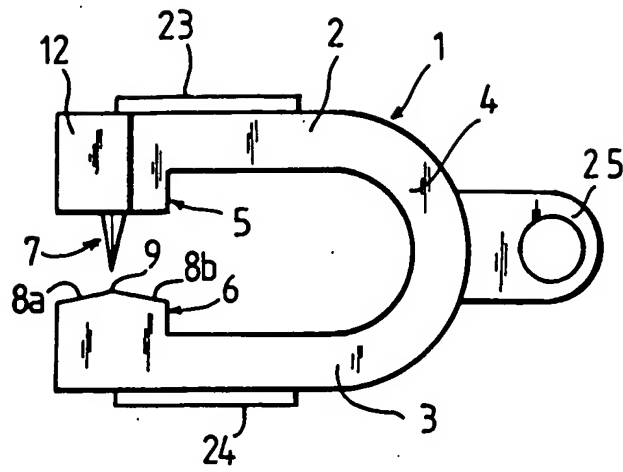


FIG. 1

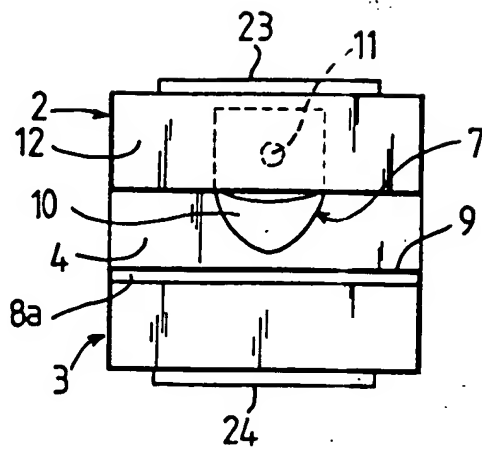


FIG. 2

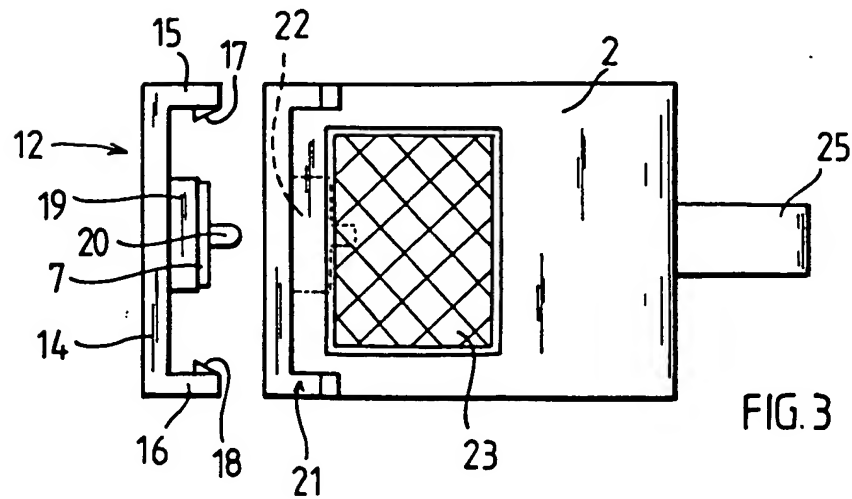


FIG. 3

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CUTTING DEVICE

TECHNICAL FIELD OF THE INVENTION

This invention relates to cutting devices which are particularly, but not solely, intended for opening sealed plastics bags.

BACKGROUND

Plastics bags are now almost universally used in favour of paper bags for containing food products such as potato crisps, breakfast cereals, frozen vegetables and numerous other products. Small portions of sauces are also supplied in sealed plastics envelopes for use in pubs, restaurants etc. One of the major advantages of the kind of plastics used is that it is virtually tear-proof, but unfortunately this also means that the bags can be extremely difficult to open without having a pair of scissors to hand. The manufacturers have tried to overcome this problem by providing a point of weakness such as a serrated edge or a slit in the edge of the bag from which a tear could be started, but many people have still failed to master the required technique.

SUMMARY OF THE INVENTION

An aim of this invention is to provide a form of

cutting device which can be carried on the person and which is particularly suitable for opening sealed plastics bags.

The present invention proposes a cutting device which is intended to be used held in the hand and which includes a unitary body in the shape of a flat strip formed into a U to provide a pair of generally parallel arms joined together at one end, the free end of one of the arms carrying a blade which lies on a plane that is generally perpendicular to that arm and having a cutting edge which is directed towards a generally perpendicular abutment surface carried at the free end of the other arm, and the body having an inherent resilience which biases the arms into such a position that there is a gap between the blade and the abutment surface for insertion therebetween of sheet material to be cut, but in which the arms can be pinched together between thumb and forefinger against such resilience to urge the blade into cutting engagement with the support surface.

The unitary body is preferably moulded of plastics.

The abutment surface may be flat, but it preferably has a shallow peak extending substantially parallel to the cutting edge of the blade and arranged to meet the cutting edge as the arms are pinched together.

The cutting edge of the blade preferably extends away from the abutment surface on either side of a region where it makes contact therewith. This makes the device suitable for left or right handed use. The blade is preferably in the form of a flat blade ground

with a crescent moon shaped cutting edge. The blade is preferably mounted between the free end of the respective arm and a separate retaining member which is secured to the arm, and may be located on a pin formed on the retaining member or on the arm. The retaining member may have a snap engagement with the arm. The retaining member is preferably bonded to the arm, for example by an adhesive or, ideally, by ultrasonic welding.

The outer surfaces of the arms may be provided with gripping formations enabling the device to be firmly gripped between thumb and forefinger.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is exemplified in the accompanying drawings, in which:

Figure 1 is a side view of a cutting device of the invention,

Figure 2 is an end view of the device, and

Figure 3 is a plan view of the device showing its retaining clip in a detached position.

DETAILED DESCRIPTION OF THE DRAWINGS

The device comprises a one-piece plastics moulding 1 which, although moulded in the configuration shown, is generally in the shape of a flat strip formed into a U.

The moulding 1 thus includes a pair of generally flat and parallel arms 2, 3 which are joined together at one end by a curved web 4. An eye 25 is formed on the outer surface of the web 4 for attachment to a split ring or such like.

The free ends of the arms 2, 3 are provided with inwardly extending platforms 5, 6, and one of these platforms 5 carries a blade 7 which projects towards the opposed platform 6. This blade lies on a plane that is generally perpendicular to the longitudinal direction of the respective arm 2. The opposed surface 8 of the opposite platform 6 is generally perpendicular to the plane of the blade but includes a pair of inclined surface portions 8a, 8b which meet in a shallow peak 9 running directly opposite to the blade.

The blade 7 is shown in more detail in Fig. 2, partly in outline. The blade is formed from a rectangular blank of surgical steel but is ground with a crescent-moon shaped cutting edge 10. This shape has been found to give a superior cutting performance in relation to plastics sheet than any other shape tried. The blade contains a hole 11 for mounting the blade on a retaining clip 12, which is also moulded of plastics and is shown in more detail in Fig. 3. The clip 12 comprises a bar 14 having a pair of lugs 15, 16 projecting from each end, the lugs in turn having opposed locking teeth 17, 18 on their inner faces. A spacing boss 19 projects between the lugs 15, 16 from the centre of the bar 14, and a pin 20 projects centrally from the boss to carry the blade 7 by passing through the hole 11. A recess 21 extends along the free end of the arm 2 and part-way along the opposite

sides of the arm to receive the clip 12. The clip is retained on the arm by snap engagement of the teeth 17, 18 in corresponding recesses in the side walls of the recess 21. The end wall of the recess 12 is also recessed at 22 to receive the boss 19 and pin 20, and this recess is of such a shape that the blade 7 is non-rotatably held on the pin with its cutting edge 10 projecting towards the abutment surface 8. The clip 12 is additionally secured to the arm 2 by ultrasonic welding, thereby ensuring that the blade cannot become detached from the moulding 1.

The outer faces of the arms 2 and 3 are provided with profiled finger grip areas 23, 24, e.g. formed by a series of intersecting ridges.

The moulding 1 has an inherent resilience which biases the arms 2, 3 into such a position that there is a gap between the cutting edge 10 of the blade 7 and the abutment surface 8. Thus, an edge region of a plastics bag to be opened can be freely inserted between the blade and the abutment surface 8. The gripping areas 23 and 24 can be held between thumb and forefinger and the arms 2 and 3 can thus be pinched together to urge the central region of the cutting edge 10 into cutting engagement with the abutment surface 8. The device is then simply moved relative to the bag in the direction of the blade to cut off a portion of the bag, or at least form a slit-shaped opening.

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CLAIMS

1. A cutting device which is intended to be used held in the hand and which includes a unitary body in the shape of a flat strip formed into a U to provide a pair of generally parallel arms joined together at one end, the free end of one of the arms carrying a blade which lies on a plane that is generally perpendicular to that arm and having a cutting edge which is directed towards a generally perpendicular abutment surface carried at the free end of the other arm, and the body having an inherent resilience which biasses the arms into such a position that there is a gap between the blade and the abutment surface for insertion therebetween of sheet material to be cut, but in which the arms can be pinched together between thumb and forefinger against such resilience to urge the blade into cutting engagement with the abutment surface.
2. A cutting device according to Claim 1, in which the unitary body is moulded of plastics.
3. A cutting device according to Claim 1 or 2, in which the abutment surface has a shallow peak extending substantially parallel to the cutting edge of the blade and arranged to meet the cutting edge as the arms are pinched together.
4. A cutting device according to any preceding claim, in which the cutting edge of the blade extends away from the abutment surface on either side of a region where it makes contact therewith when the arms

are pinched together.

5. A cutting device according to Claim 4, in which the blade is in the form of a flat blade ground with a crescent moon shaped cutting edge.

6. A cutting device according to any preceding claim, in which the blade is mounted between the free end of the respective arm and a separate retaining member which is secured to the arm.

7. A cutting device according to Claim 6, in which the blade is located on a pin formed on the retaining member or on the arm.

8. A cutting device according to Claim 6 or 7, in which the retaining member has a snap engagement with the arm.

9. A cutting device according to Claim 6, 7 or 8, in which the retaining member is bonded to the arm.

10. A cutting device according to any preceding claim, in which the outer surfaces of the arms are provided with gripping formations enabling the device to be firmly gripped between thumb and forefinger.

11. A cutting device substantially as described with reference to the drawings.

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